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Comparing The Emergency Food Assistance Program and the Food Stamp Program

Recipient Characteristics, Market Effects, and Benefit/Cost Ratios

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Courtney Harold

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Abstract

The Emergency Food Assistance Program (TEFAP), a commodity-based program, and the coupon-based Food Stamp Program can, for a given level of expenditure, serve more needy households than either program can serve alone. TEFAP distributes Government surpluses and purchased commodities to needy households. Although TEFAP expenditures ($300 million per year since 1989) are small compared with those of the Food Stamp Program ($23.6 billion in FY-1993), a commodity-based program such as TEFAP can complement food stamps by distributing food to households unwilling to apply for food stamps because of complicated application procedures and the stigma attached to food stamps. TEFAP can also increase awareness of eligibility for food stamps and other Federal assistance. This report compares the programs' recipients, effects on food and nonfood markets, and benefit/cost ratios.

Keywords: Emergency Food Assistance Program (TEFAP), Food Stamp Program (FSP), commodity distribution, food and nutrition programs, surplus commodities.

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Summary

The Emergency Food Assistance Program (TEFAP), a commodity-based program, and the Food Stamp Program, a coupon-based program, can, for a given level of expenditure for food assistance, serve more needy households then either program can serve alone. TEFAP is a U.S. Department of Agriculture program that distributes surplus commodities and purchased foods directly to low-income households through State and local organizations. Following TEFAP's introduction in 1982, annual expenditures reached $1 billion at the program's peak in 1984, then steadily declined and have remained under $250 million per year since 1989. Although TEFAP expenditures are small compared with Food Stamp Program expenditures ($23.6 billion in FY 1993), TEFAP can serve a complementary role to food stamps, because TEFAP's direct food donations are more acceptable to some needy households than are food stamps and it uses local food support organizations.

TEFAP Complements Food Stamps in Two Key Respects

The Food Stamp Program generally is viewed as a better program than TEFAP for providing food assistance because the Food Stamp Program uses the efficient transportation and distribution systems of the commercial food sector, offers recipients a wider choice of food items, and is not affected by the availability of surplus commodities. However, only about 60 percent of the households eligible for the FSP are enrolled. A commodity-based program, such as TEFAP, can complement food stamps in two key respects.

First, TEFAP appeals to individuals who are unwilling to apply for food stamps. Some recipients appear to perceive foods that are directly donated to them through TEFAP as less of a welfare benefit than food stamps. This is especially true among elderly households, who tend not to enroll in the Food Stamp Program, in part due to complicated application procedures and the stigma they perceive to be attached to the program.

Second, TEFAP relies on local volunteers and other charitable organizations to help identify needy individuals, many of whom may not be aware of their eligibility for food stamps and other Federal benefits. The U.S. General Accounting Office has estimated that one-half of the households eligible but not participating in the FSP are not aware of their eligibility. Along with donating food, TEFAP has the potential of increasing awareness of food stamps and other Federal assistance.

TEFAP and Food Stamps Differ in Their Effects on Food and Nonfood Markets

When TEFAP distributes commodities from Government-owned surpluses which are acquired through price-support programs, it reduces the market prices of these commodities. This benefits both recipient and nonrecipient consumers, but displaces some retail food sales of the donated commodities.

When TEFAP purchases food for donation, its effects on food prices are more similar to those of the Food Stamp Program, although TEFAP purchases occur before the products enter retail outlets. Both programs increase total food demand, which can raise food prices at the supermarket. TEFAP's effects are concentrated on a limited number of products, while Food Stamp Program effects are spread throughout the food sector.

Federal Benefit/Cost Ratios

TEFAP and food stamps also affect farmers differently. Farmers receive only about 7 cents of each dollar spent on the Food Stamp Program. Producers of the commodities donated through TEFAP receive an estimated 85 cents per dollar of Federal expenditure in a version that donates only surplus commodities and up to 27 cents per dollar in a version that purchases all the commodities it donates. TEFAP's sectorwide farm effects are chiefly limited to producers of the purchased commodities, which include cheese, butter, canned meats, canned fruits and vegetables, peanut butter, and cornmeal. Supply and demand interactions mean that producers of non-TEFAP commodities can also be affected.

Food stamps provide recipients with greater benefits per dollar of Federal expenditures than TEFAP, because the Food Stamp Program allows a wider choice of food and nonfood items. Estimates indicate that the average recipient's benefits per dollar of Federal expenditure on food stamps can be as much as two to three times those realized by TEFAP, but only for those individuals who enroll in the Food Stamp Program.

Comparing the Emergency Food Assistance Program and the Food Stamp Program

Recipient Characteristics, Market Effects, and Benefit/Cost Ratios

J. William Levedahl, Nicole Ballenger, Courtney Harold

Introduction

The Emergency Food Assistance Program (TEFAP) is a U.S. Department of Agriculture (USDA) program that distributes surplus commodities and purchased foods to households through State and local organizations. TEFAP has been in operation for over a decade. Although it is much smaller than the Food Stamp Program (FSP), TEFAP appears to have a useful niche in an array of food and nutrition programs benefiting low-income Americans.[1] Other food distribution programs target specific groups or institutions, such as lactating mothers, infants and children, Indian reservations, or schools. However, with a few minor exceptions, eligibility in TEFAP and FSP depends only on financial status.

Despite TEFAP's 10-year history, relatively little attention has been given to its economic effects, or its effectiveness and efficiency in relation to the FSP. This report compares the two programs on the basis of several criteria. A comparison of the two programs could contribute to the debate likely to ensue when TEFAP comes up for reauthorization in 1995. It may also illuminate features of the FSP that would not come into focus if the FSP were evaluated in isolation.

There are four main reasons to compare the FSP and TEFAP, despite their very different sizes.

First, the characteristics of TEFAP recipients differ somewhat from the profile of FSP recipients, suggesting that each program responds to the needs of particular groups of food program participants.

Second, TEFAP, as a commodity-based program, implies a different degree of efficiency as measured by its benefit/cost ratio, compared with a coupon-based program such as the FSP.

Third, food distribution channels are affected differently by the two programs. This has led to separate constituencies growing up around each program. For example, national hunger program advocates, such as the Food Research and Action Center and Bread for the World, prefer the FSP to TEFAP. They argue that TEFAP is less reliable than the FSP because of its reliance on surpluses, and that it is not as efficient as the FSP at targeting the most needy. Local food providers, however, including many church organizations, are strong advocates of TEFAP. TEFAP provides budget support to some community service organizations. Some organizations, such as the District of Columbia's Bread for the City, claim that TEFAP food can draw clients into their agencies where they can then be connected to other social services, including the FSP (Ballenger and Mabbs-Zeno).

Fourth, farm groups may also take different stands on the two programs.

Food Program Overview

Early U.S. food assistance programs were motivated mostly by the availability of farm commodity surpluses accumulated through Government price support programs. Food assistance programs relied on com-

[1] In FY 1993, TEFAP expenditures were about 1 percent of those of the FSP ($229.2 million versus $23.6 billion), down from 7.3 percent in 1986 ($895.2 million versus $12.5 billion).

modity surpluses for decades. The programs fluctuated with the level of surpluses, that is, food assistance expanded when surpluses were large and contracted when surpluses fell. For example, an experimental Food Stamp Program begun in 1939 ended when surpluses turned to scarcities during World War II. In 1961, when wheat stocks held by the Commodity Credit Corporation (CCC) were at a record high, a pilot program was introduced that offered counties the option of providing direct commodity distribution or operating a Food Stamp Program. The resulting Food Stamp Act of 1964 still offered the choice between coupons and commodities.[2]

Food Assistance Program Costs

The importance of commodity surpluses to food assistance programs was sharply reduced in the early 1970's when commodity surpluses were largely unavailable and Congress mandated the nationwide Food Stamp Program.

Since that time, the FSP has been the largest U.S. food assistance program: in 1993 it cost almost $23.6 billion, up from about $11.6 billion in 1986. Today's food stamp benefits are not linked to agricultural production, commodity stocks, or farm policy.

Mandating a nationwide Food Stamp Program, however, did not completely eliminate the role of commodity distribution in food assistance programs. When Government-owned commodity stocks rose in the early 1980's, commodity distribution programs increased in importance with the introduction of TEFAP in 1982 (Lipsky and Thibodeau). TEFAP was the largest discretionary food donation program involving domestic distribution of Government-held commodity surpluses during most of the past decade. It was a $1 billion program at its peak in 1984, but since 1989 the value of food distributed through TEFAP has not exceeded $250 million per year. Other USDA assistance programs that donate food are: Food Distribution Program for Charitable Institutions (which includes donations to soup kitchens, food banks, and summer camps), the Disaster Feeding Program, the National School Lunch Program, the Child and Adult Care Food Program, Commodity Supplemental Food Program, the Food Distribution Program on Indian Reservations, and the Nutrition Program for the Elderly. Non-TEFAP food donations by USDA averaged approximately $1 billion per year between FY 1989 and FY 1993. Entitlement commodities made up about 75 percent of this total with the remainder being bonus commodities.[3] The value of TEFAP and bonus donations to all other USDA programs were approximately equal over this period.

Evolution of TEFAP

TEFAP began as a cheese-giveaway program implemented in 1982 when the Administration granted USDA the authority to give away surplus dairy products to prevent waste and spoilage. The program quickly expanded to include other commodities with abundant surpluses, such as wheat and corn (processed into flour and cornmeal), rice, and honey. The USDA's Agricultural Stabilization and Conservation Service (ASCS) was charged with processing and packaging the surplus commodities and distributing them to State distribution agencies. The distribution agencies were responsible for monitoring and coordinating the flow of commodities from the State level to local emergency food organizations and final distribution sites.[4]

TEFAP was originally designed to be temporary, and until 1991 it was called the Temporary Emergency Food Assistance Program. However, a series of legislative reauthorizations has kept TEFAP operating. It was reauthorized by the Food Security Act of 1985, the Stewart B. McKinney Homeless Assistance Act (1987), the Hunger Prevention Act of 1988, and the 1990 Food, Agriculture, Conservation, and Trade Act.

Purchased Commodities Reduced TEFAP's Reliance on Surpluses

The 1988 and 1990 extensions also authorized USDA to purchase commodities to supplement TEFAP donations, rather than relying solely on available surpluses. The Agricultural Marketing Service (AMS) was charged with buying meats, fruits, vegetables, and processed foods such as peanut butter and canned beans specifically for distribution through TEFAP. By

[2]For detailed historical reviews of the FSP and other U.S. food assistance programs, see Andrews and Clancy, 1986; Claffey and Stucker, 1982; Jones, 1989 and 1990; Maney, 1989.

[3]The receipt of entitlement commodities is determined by Federal statutes. "Bonus" commodities can be received when they are available from surplus stocks purchased by the USDA under its price support program.

[4]In 1985-86, there were an average of 38 Emergency Food Organizations per State, although the actual number per State varied greatly. During this period, a variety of final distribution sites were used including churches, food banks, community service and action agencies, senior citizen organizations, civic, fraternal, and veterans' organizations, private charities, county and State welfare ofices, and other county and local government agencies (Quality Plannning Corporation and Abel, Daft and Earley). With the decline in total donations, final distribution of TEFAP commodities was more likely to be provided through ongoing emergency food service providers. The reliance on local distribution, however, has been a distinctive feature of TEFAP.

FY 1992, the value of purchased commodities was about one and a half times that of the surplus donations.

Despite the reauthorizations and the shift to purchases, the value of commodities and foods distributed through TEFAP declined markedly when Government-owned stocks fell sharply following the 1988 drought. Total TEFAP expenditures are now about one-fifth of their peak 1984 level. FSP benefits, on the other hand, rose sharply after 1989 when the United States entered a recession.

The movement toward purchases freed TEFAP from its reliance on surplus availability, but USDA's market purchases are limited by budget appropriations. This appropriation process affects a broader set of commodity markets and producer groups than had been affected by surplus distribution alone. The market effects of a purchase program also differ from those of a surplus distribution program.

Program Comparisons

TEFAP and the FSP can be compared along a number of different dimensions. These dimensions are grouped below according to how the programs affect recipients, food and commodity markets, and the Federal benefit/cost ratio for each program. The qualitative effects are summarized in table 1.

In this report, two versions of TEFAP are analyzed: a surplus donation version and a purchase version. The surplus donation version is identical to TEFAP prior to 1988 in which all donations were made from surplus commodities acquired through price support programs. The purchase version refers to a program in which all TEFAP commodities are purchased and donated in the same period. This (pure) purchase version does not exist but is defined for conceptual purposes. The current version of TEFAP (since 1988) is a combination of the two versions analyzed in this report with both purchased and surplus commodities being distributed in a given period.

Recipient Effects

The FSP and TEFAP have different eligibility criteria and procedures for determining recipient benefits. The level of food stamp benefits received by a household depends on its income and size, and is uniform throughout the contiguous States. TEFAP benefits depend on the frequency of distribution and the allowable allotments based on household size, which are determined by individual States and vary from one State to another.

Eligibility

Individual states are responsible for establishing program eligibility limits and for screening potential TEFAP recipients. TEFAP eligibility is based on the household's self-reported income and can be as high as 185 percent of the Federal poverty guideline. TEFAP eligibility is not, however, closely monitored. Most States also set some categorical eligibility requirements. For example, in 1991, FSP households were categorically eligible for TEFAP in 39 States.

Eligibility requirements for the FSP are more demanding than those for TEFAP. In addition to a gross income requirement, the FSP requires households to satisfy asset and net income requirements. Except for households with elderly or disabled members, FSP eligibility requires a gross income less than or equal to 130 percent of the Federal poverty guideline. Twenty-eight States, however, allow households to qualify for TEFAP with a gross income above this threshold.

Despite the FSP's stricter eligibility requirements, most households eligible for TEFAP are also eligible for the FSP. USDA's Food and Nutrition Service estimates that about 90 percent of TEFAP recipients may be eligible for the FSP. Even though most TEFAP recipients are eligible for the FSP, the available evidence indicates that fewer than half are actually enrolled.[5]

Characteristics of Recipients

The only comprehensive profile of TEFAP recipients is provided by *A Study of the Temporary Emergency Food Assistance Program.*[6] Comparing this profile with the profile of the FSP recipients at the same time illustrates that age is the primary difference between the recipients of the two programs. TEFAP recipients tend to be older than FSP recipients. In 1986, FNS found nearly 40 percent of TEFAP households were headed by someone age 60 or older, while at the same time slightly more than 15 percent of FSP households had an elderly head. Evidence collected from focus groups indicates that the elderly perceive the FSP application and issuance procedures to be significant

[5]In 1986, 41 percent of TEFAP recipients were also enrolled in the FSP (USDA, FNS, 1987).

[6]This profile describes TEFAP recipients during the surplus donation era when program expenditures were near their peak level. Unfortunately, a similar survey for the smaller scaled-down version of TEFAP that resulted after 1986 is not available.

barriers to participation (Ponza). This study also found that the elderly generally prefer the relatively simple enrollment procedures of food distribution programs such as TEFAP. In another study, Ponza and Wray report that some elderly have a negative attitude toward food stamps because the coupons clearly identify the user as a welfare recipient.

The 1987 FNS study found that TEFAP households were less likely than FSP households to include children (48 versus 61 percent). More FSP recipients enrolled in other welfare programs than did TEFAP recipients: 42 versus 19 percent received Aid to Families with Dependent Children (AFDC) payments; 12 versus 7 percent received General Assistance payments; and 18 versus 13 percent received Social Security (Disability) Insurance (SSI) payments (USDA, FNS, 1987). Despite these differences, there was overlap in the recipients served by the two programs. However, only about 40 percent of TEFAP recipients were enrolled in the FSP in 1986.

Nutritional Effects

At its inception, TEFAP distributed surplus commodities available from CCC stocks. Dairy products were the largest portion of these commodities. Groups concerned with nutrition claimed that these products are high in fat and, therefore, unhealthy for recipients. This has become less of a concern because the role of cheese in the program has been greatly reduced. Additionally, commodities purchased for TEFAP are now chosen, in part, according to their nutritional content.

Several studies have evaluated the nutritional consequences of the FSP. In general, these studies have concluded that Food Stamp participation increases at-home nutrient availability but evidence regarding actual nutrient intake is inconclusive (Fraker; Allen and Gadson). Nutrient availability increases because the receipt of food stamps increases total food expenditures. There is no statistically significant evidence, however, that FSP recipients purchase more nutritious foods, except for calcium (Morgan, Peterkin, Johnson, and Goungetas). This conclusion is also supported by evidence from Nelson, who notes that the proportion of the food expenditure dollar spent on the various commodity classes is about the same for FSP recipients and others.

In contrast to food availability, the FSP's ability to increase actual nutrient intake (from food at home and food away from home) has not been widely established. Studies cited by Fraker provide evidence that the FSP has an insignificant effect on nutrient intake.

Expenditures on Food and Nonfood Items by Recipients

TEFAP and the FSP have different effects on food and nonfood expenditures by program recipients.

Studies based on post-purchase household data have estimated that a dollar's worth of food stamps increases at-home food expenditures an average of 26 cents (Fraker). The receipt of food stamps allows households to substitute stamps for previous cash expenditures on food. This results in purchases of other items increasing by 74 cents per dollar of food stamp benefits.

TEFAP donations affect recipients' expenditures through income and substitution effects. Receipt of the donations will, in principle, increase expenditures on all commodities because the donations represent an increase in real income. Donations may also replace recipients' away-from-home purchases of the donated commodities. Given the size of the income and price elasticities for food items, the substitution effect will likely dominate, and recipient expenditures on the donated commodities will fall.

The effect of the donations on the recipients' expenditures for a particular nondonated commodity depends on whether the nondonated commodity is a substitute or complement to the donated ones. For example, TEFAP donations of butter, which is a margarine substitute, decrease recipients' expenditures for margarine.

The effect of TEFAP, as a surplus disposal program, on recipients' expenditures has been analyzed by Levedahl (1991) using a general equilibrium framework involving cheese, other foods, and nonfood items. This framework is summarized in the appendix. Using data on 1986 TEFAP cheese donations as an illustration, TEFAP donations were calculated to have displaced approximately 80 percent of recipients' expenditures on cheese. Five percent of the displaced expenditures was spent by recipients on other foods, and the remainder was spent on nonfood items.

Food and Commodity Market Effects

TEFAP and the FSP also have different effects on food and commodity markets. Because the programs affect food prices, they indirectly affect expenditures for food and nonfood items by nonrecipients, and revenues to retailers and farmers.

Effect on Price and Demand

The effect of TEFAP on prices of donated commodities depends on whether the commodities are donated from existing surpluses or purchased. TEFAP, as a purchase program, purchases commodities specifically for distribution. This increases the demand for these commodities in the current period, which tends to increase their prices (unless they are produced under constant cost). The maximum increase in the price of the donated commodities will occur when recipients have no prior purchases of the TEFAP commodities. The existence of nonzero income elasticities for the donated commodities is sufficient to ensure that Federal TEFAP purchases result in a net increase in the demand for these commodities.

On the other hand, as a surplus disposal program, TEFAP tends to lower expenditures on the donated commodities in the current period because they displace recipients' purchases of the donated commodities. This reduces the current period prices of these commodities. The exception occurs when TEFAP recipients have no prior purchases of the donated commodities. Then, donations have nothing to displace and the prices of the donated commodities are unchanged.

Any change in the prices of the donated commodities will, in general, change the prices of nondonated commodities as well. The price change of a particular nondonated commodity depends on whether it is a net substitute or complement (in both demand and supply) to the donated commodities. Since the prices of the donated commodities increase in a purchase program and decline in a surplus disposal program, the price of the particular nondonated commodity will tend to either increase in one version of TEFAP and decline in the other, or vice versa.

For example, in the analysis of TEFAP as a surplus disposal program, Levedahl (1994) calculated that TEFAP cheese donations in 1986 reduced the retail price of cheese by 3.4 percent. The effect on the prices of other foods and nonfood items was small. The cheese donation results in a 0.005 percent price reduction for other foods and in a 0.006 percent price increase for nonfood items . The price reduction of other foods results chiefly because cheese and other foods are substitutes in demand. If TEFAP were a purchase program, the retail price of cheese would have increased by some amount, the price of other foods would have increased, and the price of nonfoods would have decreased.

Few studies have attempted to calculate the effect of the FSP on retail food prices. Schrimper has provided the most frequently cited work on the subject. He assumes different supply elasticities, various values of the recipients' share of the food market, and a retail demand elasticity for food equal to -0.2. Using these assumptions, retail price elasticities with respect to recipient food expenditures from 0.008 to 0.4 were calculated for a variety of goods. Schrimper concludes that food programs would have to produce relatively large increases in participants' food demand under conditions of relatively inelastic supply in order to increase retail food prices significantly.

An important qualification of Schrimper's and others' work on the price effects of the FSP is their limitation to a partial equilibrium analysis. This means that these studies concentrated solely on the initial price effect on single food items and do not extend the results to include any interaction with other food or nonfood items.

Expenditures by Nonrecipients

The higher prices of the donated commodities in a purchase program imply that smaller quantities of these commodities are purchased by nonrecipients. Nonrecipient expenditures on these commodities may or may not increase, depending on the elasticity of demand. As a practical matter, price elasticities of food items are inelastic, implying that nonrecipients' expenditures on the donated commodities increase.

As a surplus donation program, TEFAP depresses the market prices of the donated commodities. This increases nonrecipients' purchases of these commodities, and so expenditures can increase or decrease depending on their demand elasticities. Again, since the price elasticities of food items are generally inelastic, the lower price of the donated commodities will likely cause expenditures by nonrecipients to decrease.

The general equilibrium analysis employed by Levedahl (1994) illustrates how TEFAP surplus cheese donations in 1986 affected cheese expenditures of nonrecipients. Cheese expenditures for these consumers decreased by slightly over 2.3 percent, while the quantity of cheese actually consumed by these households increased by 0.5 percent.

TEFAP's effect on the prices of the donated commodities will change the prices of the nondonated commodities, and, thus, will change nonrecipients' expenditures on nondonated commodities. As an illustration of a surplus disposal program, Levedahl

(1994) calculates that 1986 TEFAP cheese donations decreased nonrecipients' expenditures on other foods by 0.02 percent, while expenditures on nonfood items increased by 1.6 percent.

Estimates of the effect of the FSP on expenditures by nonrecipients are generally unavailable. They can be inferred in a partial equilibrium analysis, however, from the food price effects obtained from Schrimper and the appropriate price and cross-price elasticities for nonrecipients.

Effects on Retail Sales and Total Expenditures

A significant difference between TEFAP and the FSP is their effects on the retail sector. This is true no matter what version of TEFAP is considered. TEFAP bypasses the retail sector by distributing commodities directly to the recipients using a combination of State government and local volunteer organizations. (Under certain circumstances States may use commercial middlemen to perform transportation and other marketing functions.) The FSP uses retail channels to distribute program benefits.

Under the FSP, retail sales and total expenditures will increase by the full amount of the benefits received by recipients (assuming all stamps are redeemed). The division between food and nonfood retail sales can be measured using the estimate, previously noted, that, on average, a dollar of food stamp benefits increases net at-home food expenditures by 26 cents. Accordingly, the FSP increased at-home food expenditures by $5.75 billion and other expenditures by $16.35 billion in 1993.

The higher price of the donated commodities resulting when TEFAP is a purchase program implies that nonrecipients will increase their expenditures on these commodities (with a price elasticity less than one, as noted above). The higher price, combined with reduced expenditures on the donated commodities by recipients, implies that the effect on total *retail* sales of the donated commodity is indeterminate. If Government TEFAP purchases (outside the retail channels) are included, however, total expenditures on the donated commodities will increase.

When TEFAP operates as a surplus disposal program, nonrecipients will most likely reduce their expenditures on donated commodities. Decreased expenditures, combined with lower expenditures by recipients, imply that total retail sales of the donated commodities fall (unless, recipients have no prior purchases of the donated commodities, in which case total sales remain unchanged).

TEFAP donations also affect retail sales of nondonated commodities. The effect on retail sales of these other commodities depends on whether they are substitutes or complements to the donated commodities, and on the magnitude of the price decrease (surplus disposal) or price increase (purchase) of the donated commodities associated with the two types of programs.

The total effect on total food expenditures by TEFAP as a surplus disposal program can be illustrated using results from Zellner and Traub, and Levedahl (1994). Zellner and Traub estimate that 40 percent of the cheese distributed by TEFAP in the 1980's displaced retail sales. For 1986, this displacement amounted to sales of $426 million (equivalent to 5.7 percent of retail sales of American cheese in that year). For the same year, Levedahl (1994) estimated that retail sales (by both recipients and nonrecipients) on food commodities other than cheese fell $36.7 million because of TEFAP cheese donations. Combining these numbers implies that retail food sales fell in 1986 by $463 million (0.2 percent) because of TEFAP cheese donations.

As either a surplus donation or a purchase program, TEFAP directly affects only a small number of commodities. For example, as a surplus donation program in 1986, TEFAP donated only 7 commodities, and as a purchase program during 1989-91, TEFAP purchased an average of only 11 commodities. While the relatively small size of TEFAP means that its effect on the food sector must be small overall, the highly concentrated purchases and donations can have a significant effect on markets for the affected commodities. For example, peanut butter purchases by TEFAP in 1989 were approximately 1.5 times previous USDA purchases of peanut butter and about 7 percent of U.S. retail volume. ERS economists estimated that half of the 8.6 percent increase in the peanut marketing quota in that year was associated with TEFAP.[7]

Effects on Farmers

In theory, food expenditures using food stamps affect farm receipts no differently than food expenditures using cash. This means that the FSP should increase farm receipts by approximately the farmer's share of the retail dollar times the net increase in food expendi-

[7]The peanut program establishes annual marketing quotas, and a two-tiered price support program for quota and "additional" peanuts. To protect the domestic peanut price support program, the U.S. Government sets an annual import quota (Crowder, Davidson, Schaub, and Wendland).

tures because of food stamps. The proportion of each food stamp dollar received by farmers can be estimated as follows. During FY 1990-92, Federal costs of operating the FSP averaged 7.6 percent of total program costs (USDA, FNS, 1992). Based on the estimate noted previously that each dollar of food stamp benefits increases at-home food expenditures by 26 cents, it follows that 24 cents of each dollar spent by the Federal Government results in increased at-home food expenditures [$0.26 x (1-.076)]. Assuming that the farmers' share of the retail food dollar is 30 percent (Dunham), farmers can, thus, expect to receive 7 cents of each dollar of Federal expenditures on the FSP [$0.24 x .3].

The additional food expenditures associated with the FSP represented approximately a 0.62-percent increase in farmers' total 1990 cash receipts. A recent study by Martinez and Dixit based on the food purchased by recipients estimated that the FSP increased farm receipts by 0.50 percent in 1990. Nelson and Perrin, using a 1976 U.S. input-output model, calculated the increase to be about 0.25 percent. This lower estimate is due, in part, to the requirement imposed by Nelson and Perrin that FSP benefits be paid out of current tax receipts (revenue neutral).

TEFAP, as a purchase program, increases total expenditures on the donated commodities and thus farm receipts in the current period. On the other hand, as a surplus donation program the likely effect of TEFAP is to reduce current expenditures on the donated commodities. This does not, however, imply a reduction in farm receipts, even in the current period, since surplus TEFAP commodities are acquired through Government price support programs at prices (to the farmer) above what would have been their market-clearing levels.

The farmers' benefit/cost ratio from Federal expenditure on TEFAP differs for the two versions of the program. For the purchase program, approximately 71 cents of each Federal dollar are spent on purchased commodities ($120 million for commodities plus $50 million authorized for administrative costs). This expenditure is at wholesale. The farmers' share of the wholesale food dollar (farm value plus processing costs plus inter-city transportation plus wholesaling functions) is 38 cents, which implies that farmers receive 27 cents for each Federal dollar spent on this version of TEFAP ($0.71 x .38 = $0.27).

For the surplus donation version of TEFAP, the return to farmers per dollar of Federal expenditures was much larger. In FY 1987, the final full year of the surplus disposal program, Federal TEFAP expenditures were $895 million, which included $50 million in administrative costs. Assuming that the net of $845 million represents payments by the Government for commodities obtained through price support programs, plus a 10 percent make allowance for commodity processors and ignoring the effects of discounting, it follows that as a surplus disposal program TEFAP returned to farmers approximately 85 cents for every dollar of Federal TEFAP expenditures (0.9 x $845/$895 = 0.85).[8]

By comparing the revenue per dollar of Federal expenditures, it is easy to understand why benefiting farmers often favor a commodity-based over a coupon-based food assistance program (assuming the same expenditures on both types of programs).

TEFAP's effect on the prices of donated commodities also affects farm receipts from the sale of nondonated commodities. These effects are likely, however, to be small. For example, Levedahl calculated that total retail expenditures on food commodities other than cheese fell a total of $36.7 million in 1986 because of the TEFAP surplus donation of cheese, as noted above. This means that farm receipts from non-TEFAP commodities will decrease by about $11 million (less than 0.01 percent in U.S. off-premises food expenditures in 1986).

Although TEFAP's sector-wide farm impacts are small because the program is small, producers of the commodities donated through TEFAP can be significantly affected. An example is the influence of TEFAP on peanut butter sales and the peanut marketing quota, as discussed above.

Federal Benefit/Cost Ratios

The Federal benefit/cost ratio is defined in this report as the value of program benefits to recipients, divided by Federal expenditures.

The Federal cost of operating the FSP during FY 1990 to FY 1992 averaged 7.6 percent of total program costs.[9] Using this average, and assuming that a dollar of food stamps is equivalent to a dollar of in-

[8]The price support programs purchase processed commodities. the price paid includes a make allowance as compensation to the commodity processors. Ten percent was the approximate amount earned by cheese processors in 1987.

[9]During the second half of the 1980's, Federal FSP administrative costs averaged around 9.5 percentof expenditures. The large increase in FSP participation observed during the 1990's has resulted in administrative costs that are a smaller proportion of Federal expenditures.

come, the benefit/cost ratio per dollar of Federal Expenditures was 0.924 (1-.076).

Comparable numbers can be calculated for both the purchase and donation versions of TEFAP. In both versions, $50 million of Federal expenditures is authorized for States and emergency food organizations to offset the cost distribution. This authorization has not changed even though the volume of commodities in the purchase version of TEFAP is much smaller than was handled by the donation version. The purchase version of TEFAP was budgeted for $170 million in the Hunger Prevention Act of 1988. Each TEFAP dollar spent in this version, therefore, results in approximately 71 cents worth of commodities ($120m/$170m). These purchases, however, occur at wholesale. The corresponding retail value can be calculated by noting that (in 1990) approximately 77 percent of expenditures at retail food stores were attributed to costs other than retailing (Dunham, table 26). This percentage implies that 71 cents at wholesale has a retail value of 92 cents (92 cents = 71 cents/.77) so that TEFAP, as a purchase program, has a maximum benefit/cost ratio of 0.92.

As a surplus donation program, the retail value of TEFAP commodities averaged $868 million per year from 1983 to 1988 (FNS). Assuming that recipients value TEFAP commodities at their market price, the benefit/cost ratio per dollar of Federal expenditure for this version of TEFAP equals 0.95 ($868 million/[$868 million + $50 million]).

It is tempting to compare the benefit/cost ratios for the FSP and TEFAP calculated above. However, this comparison would be valid, in general, only if TEFAP commodities are assumed to be distributed with the same level of retail services as are those received through the FSP. Since TEFAP provides fewer retail services than the FSP, obtaining comparable figures would require a way of measuring the level of retail services provided by TEFAP. If this could be done then, in principle, the cost for each program to deliver a given level of retail benefits could be determined. Alternatively, the relative magnitudes of the two ratios could be compared if, in the context of alleviating hunger, retail service are assigned no value. This means, for example, that individually wrapped cheese slices available in grocery stores would have no value beyond their cheese content.

[10]For example, some TEFAP recipients complained that donated cheese was available only in 5-pound blocks instead of the more convenient 1-pound size.

The ratios of benefits per dollar of Federal expenditure calculated above for both versions of TEFAP overstate their benefit/cost ratios to society. This is true because some costs associated with TEFAP are not incorporated into the calculations. For example, the uncompensated outlays by States and by voluntary organizations are ignored, as are any opportunity costs of having charitable organizations distribute TEFAP commodities instead of engaging in other charitable activities.

A dollar of food assistance is not, generally, valued as a dollar of income by recipients. The calculation of program benefits is more complicated when recipients evaluate these benefits at less than market prices.

Published estimates using household survey data collected after the elimination of the purchase requirement in 1979 can be used to calculate the recipients' evaluation of FSP benefits. These estimates imply a net increase in average at-home food expenditures of 26 cents for each dollar of food stamp benefits received (Fraker). This estimate implies that a dollar of food stamps increases nonfood expenditures by 74 cents.[11] Assuming the Federal cost of operating the FSP is 7.6 percent of total program expenditures, the implied minimum benefit/cost ratio is 0.684 [(1-.076) x 0.74].

Recipient evaluation of TEFAP benefits is illustrated by the results provided by Levedahl (1994) for the 1986 surplus donation of cheese. He calculated that the average retail value that recipients place on a pound of TEFAP cheese was $1.06, compared with a retail price of $2.60. This implies that the value of a dollar of donated cheese is equivalent to $0.41 ($1.06/$2.60). Since the retail price of cheese is used for comparison, this number is comparable to $0.74 calculated for the FSP. The difference reflects the limited availability of TEFAP commodities compared with the FSP. The low monetary value placed on TEFAP cheese reflects the large TEFAP donation of cheese in 1986. In that year, the average cheese donation was approximately twice a recipient's prior

[11]This interpretation refers to households whose food expenditures equal or exceed their food stamp benefits. The 26 cents of at-home food expenditures implies that a dollar of food stamp benefits is equivalent to 74 cents worth of expenditure on other items. This calculation of the value of food stamps measures the effect of substituting food bought with stamps for food bought with income but does not include the value of at-home food expenditure generated by the receipt of food stamps through the income effect. This measure represents a minimum value of food stamps in the sense that it is an estimate of the value at which food stamps are "sold." See Levedahl (1991, p. 4) equation 5 for further explanation.

annual consumption. Current TEFAP donations are much smaller than the 1986 cheese donations, implying that $1 of TEFAP commodities is worth more than 41 cents to recipients.

The benefit/cost ratio per Federal dollar for TEFAP that reflects recipient evaluation can be calculated by multiplying the benefit/cost ratio obtained when donations are evaluated at market prices by 0.41. For the surplus donation version of TEFAP, this implies a ratio of 0.39 (.95 x .41), and for the purchase version a ratio of 0.29 (.77 x .41). The difference in these ratios reflects the smaller (proportional) contribution by the Federal Government for commodity distribution when TEFAP was a surplus donation program.

In general, the FSP is a more efficient means of providing food assistance than TEFAP, whether benefits are evaluated at market prices or by their value to recipients, for two reasons. One, TEFAP benefits are limited to a few commodities. This limits recipient choice, compared with the FSP, and lowers the value of the donation, compared with the (relatively) unrestricted choice provided by the FSP. Two, TEFAP cannot be as efficient as the commercial sector in providing retail services. The efficiency of FSP, however, does not weigh the fact that TEFAP reaches some needy individuals who are eligible but not responsive to the FSP.

The exact cost of reaching individuals eligible for but not enrolled in the FSP cannot be calculated. However, previously published estimates can be used to estimate the additional FSP expenditure required to reach unresponsive elderly households. In particular, suppose an estimate of the additional FSP expenditure needed to increase the elderly FSP participation rate to the overall average rate was desired. As an example, in January 1989 households with an elderly member had a participation rate of 29 percent compared to the overall average of 55.5 percent (Trippe and Doyle). To reach the overall average, the enrollment of households with an elderly member would have to increase by 1.18 million to 2.471 million households. Studies by Smallwood and Blaylock, Johnson, Chen and Burt, and Chen and Johnson on the determinants of FSP participation suggest that in order to increase elderly enrollment by this magnitude, food stamp benefits to these households would have to increase by approximately $65 per month. In the summer of 1989, households with an elderly member received, on average, $52 per month in food stamp benefits (USDA, FNS, 1991). Therefore, to increase elderly participation to the average participation rate, monthly benefits of $117 would be required (average benefits for all household in the summer of 1989 were $129 per month).

Assuming that FSP benefits could be targeted to elderly households, and that all elderly participants must receive the same benefits (the higher benefits apply to all elderly households), an additional $2.883 billion of Federal expenditures would have been required to raise the elderly FSP participation rate to the overall average.[12] This additional expenditure would represent approximately a tenfold increase in the 1989 level of TEFAP, and would be about 160 percent greater than expenditures at the height of the program in 1984.

Conclusions

This report compares the FSP, a coupon-based food assistance program, with TEFAP, a commodity-based program. These programs are structurally different. This difference is reflected principally in each program's: (1) recipient characteristics, (2) effects on the retail food establishment and local charitable organizations, (3) effects on the farm sector, and (4) Federal benefit/cost ratio.

As part of a comprehensive objective of providing food assistance to needy individuals, the utility of using both types of programs arises from differences in their recipients. The FSP is targeted to all low-income individuals. However, the stigma associated with the FSP and the perception of a complicated application process is well documented, especially among the elderly. TEFAP's relative attraction to the elderly and other groups not participating in the FSP appears to result, in part, from a belief that enrolling in TEFAP is less difficult than enrolling in the FSP and from a belief that TEFAP is less of a welfare program. The reluctance of the household to participate in the FSP could be reduced by modifying the FSP to make it more attractive to the elderly, such as, for example, by simplifying the FSP enrollment process. However, part of TEFAP's relative attractiveness to these groups is based on their perceived attitudes toward the FSP. It may prove difficult and costly to overcome

[12]The benefits required would consist of $1.657 billion per year to induce new households to participate [$117 per month x 12 months x 1.180 million households] and $1.007 billion per year additional payment to elderly households who already participate [$65 per month x 12 months x 1.291 million households]. This totals to a $2.664 billion increase in FSP benefits. Assuming that 7.6 percent of FSP expenditures are for program operations, then Federal expenditures would need to increase by $2.883 billion per year [$2.664 / (1-0.076)].

these perceptions. Instead, a more cost-effective alternative could be a food assistance program, like TEFAP, that acknowledges these attitudes.

The General Accounting Office estimates that about half of the households eligible but not participating in the FSP are unaware of their eligibility. This situation provides a second way in which TEFAP and the FSP can complement each other. A unique characteristic of TEFAP, either as a purchase or a surplus donation program, is its reliance on local volunteer and other charitable organizations who are able to identify needy individuals, many of whom, as pointed out by the GAO, may be unaware of their eligibility for food stamps and other Federal benefits. Along with donating food to these individuals, TEFAP can help to increase awareness of their eligibility for food stamps and other Federal assistance.

Table 1--Program effects of TEFAP and the FSP on various agents[1]

Agent	Food Stamps	TEFAP		Comment
		Purchase	Surplus donations	
Recipient	+	+	+	Both FSP and TEFAP have some distinct recipients
Nonrecipient	-	-	+	
Retailers	+	-	-	
Volunteer food organizations	0	+	+	
Nonfood items	+	+	+	
Manufacturers of donated or purchased products	+	+	-[2]	
Average benefit/cost ratio per dollar of Federal expenditure				
To recipients	0.68[3]-0.92[4]	0.29[5]-0.92[6]	0.39[5]-0.95[6]	
To farmers	0.07[7]	0.27[8]	0.85[9]	TEFAP benefits producers of a few commodities

[1]A + sign indicates a positive effect on the particular agent.

[2]Government processing contracts will benefit certain manufacturers, however, the net effect is negative

[3]Calculated assuming the recipient's value of food stamp relative to that of income is .74, see footnote 11 in text.

[4]Calculated assuming a dollar of food stamps is equivalent to a dollar of income.

[5]Calculated using the recipients' value of 1986 TEFAP cheese donations, see Levedahl (1994).

[6]Calculated assuming recipients value TEFAP donations at market prices and TEFAP provides the same level of services as the FSP.

[7]See pages 6-7.

[8]Each dollar of Federal TEFAP expenditure is estimated to yield 71 cents worth of commodities. The farmer's share of wholesale dollar is 38 cents, implying the farmer receives 27 cents of each Federal TEFAP dollar.

[9]This number is calculated for FY 1987, the final year of TEFAP as a surplus disposal program. It assumes that the net expenditure by the government equals the accumulated payments to farmers for the commodities obtained by price support programs, less a 10-percent make allowance to commodity processors and a zero interest rate.

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Appendix

Measuring the Price and Expenditure Effects of Surplus Donation Program

Levedahl (1994) specified the effect of a surplus disposal program using a general equilibrium framework. This appendix summarizes this framework.

Market equilibrium for h goods expressed in log differential form is denoted as,

$$\underline{w}_r d\log(\underline{e}_r) + (I_h - \underline{w}_r)d\log(\underline{e}_{nr}) = d\log(\underline{e}^s) \qquad \text{(A1)}$$

where an underline denotes a vector and the subscript r and nr denote recipients and nonrecipients. Let $d\log(\underline{e}_r)' = [d\log(e_{r1}) \ldots d\log(e_{rh})]$ and $d\log(\underline{e}_{nr})' = [d\log(e_{nr1}) \ldots d\log(e_{nrh})]$ where e_{ri} and e_{nri} are expenditures by the recipients and nonrecipients on the ith good. Define $\underline{w}_r$ as a hxh diagonal matrix whose ith diagonal element is the recipients' share of total expenditure on the ith good. I_h is the hxh identity matrix. Let $d\log(\underline{e}^s)' = [d\log(e^s_1), \ldots, d\log(e^s_h)]$ denote the value of goods supplies measured in log differential form.

An expenditure system for recipients was obtained as a generalization of Roy's identity. This system and one for nonrecipients were substituted into (A1). We assume no income change for either recipients or nonrecipients and that the first good is donated. The resulting expenditure system is written as follows:

$$\underline{w}_r\{\underline{\alpha}[(\underline{N} + I_h)d\log(\underline{p})' + (\alpha_{yo}\underline{N}_y - \underline{A})(1 + \mu)d\log(\underline{d}_o)']\} +$$

$$(I_h - \underline{w}_r)(\underline{N} + I_h)d\log(\underline{p})' = (\underline{S} + I_h)d\log(\underline{p})', \qquad \text{(A2)}$$

where,

$\underline{S}$ is a h x h matrix of supply elasticities,

$\underline{N}_y$ as the hxh matrix with income elasticities down the main diagonal and zero elsewhere,

$d\log(\underline{d}_o)$ is the 1xh row vector with the log differential of the donation, $d\log(d_o)$, as its first element and zeroes elsewhere.

$\underline{N}' = [\underline{N}_1 \ldots \underline{N}_h]$, where $\underline{N}_i = [n_{i1}\ n_{i2} \ldots n_{ih}]$ is the 1 x h vector of own and cross price elasticities for the ith good and assumed to be the same for to both recipients and nonrecipients,

$\alpha = p_1q_1/p_1Q_1$ the expenditure share of the donated good bought with income.

$\alpha_{yo} = 1 - y/(y+y_o)$ the value of the donation as a proportion of the recipient's "total" income (income plus the value of the donation.)

$\mu = d\log(g)/d\log(d_o)$ the elasticity of the marginal value of the donation with respect to its level.

$$\underline{\alpha} = \begin{bmatrix} 1/\alpha & 0 \\ 0 & I_{h-1} \end{bmatrix}$$

$$\underline{A} = \begin{bmatrix} (1-\alpha) & 0 \\ 0 & 0_{h-1} \end{bmatrix}$$

Solving (A2) for the equilibrium percentage change in prices gives,

$$\text{dlog}(\underline{p})' = -[\underline{P}(\underline{N} + I_h) - (\underline{S} + I_h)]^{-1} \underline{w}_r\underline{\alpha}[(\alpha_{yo}\underline{N}_y - \underline{A})(1 + \mu)]\text{dlog}(\underline{d}_o)' \qquad \text{(A3)}$$

where $\underline{P} = \underline{w}_r\underline{\alpha} + (I_h - \underline{w}_r)$.

To measure the effect of implementing TEFAP (A3) was rewritten for the specification with no initial donations. The resulting specification was written with donations measured by the proportion of consumption before the program. That is, donations are measured as d_o/q_b, where q_b denotes consumption by recipients before TEFAP.

$$\text{dlog}(\underline{p})' = [(\underline{Z}_r + \underline{Z}_{nr})(\underline{N} + I_h) - (\underline{S} + I_h)]^{-1} \underline{Z}_r[\alpha_g\underline{r}_p\underline{N}_y - \underline{B}]\ (d_o/q_b), \qquad \text{(A4)}$$

where subscripts b and a are used to denote before and after the start of the food assistance program, and,

$\underline{Z}_r = \underline{w}_r\underline{\beta}_r$; $\underline{\beta}_r$ is a diagonal matrix defined for recipients. For each good, the diagonal element is the quantity purchased by recipients after TEFAP, evaluated at the before TEFAP price, relative to their expenditure before TEFAP. That is, p_bq_a/p_bq_b.

$\underline{Z}_{nr} = (I_h - \underline{w}_r)\underline{\beta}_{nr}$; $\underline{\beta}_{nr}$ is similar to $\underline{\beta}_r$ except expenditures are by nonrecipients.

$\underline{r}_p$ is a diagonal matrix. For each good the diagonal element is the price after TEFAP relative to the before TEFAP price. That is, p_a/p_b.

$\underline{B}$ is a hxh matrix with the (1,1) element equal to gq_b/p_bq_a and zero elsewhere. The variable g represents the value placed by recipients on a unit of the donated commodity which is less than or equal to the market price.

$\alpha_g = gq_b/(y + gq_b)$.

In Levedahl (1991), (A4) was applied to TEFAP cheese donation. In this case three commodities were specified (h=3), cheese purchased with income, other foods, and non-food. Data on TEFAP recipient expenditure were obtained from *A Study of the Temporary Emergency Food Assistance Program.* Other data was obtained from *The Statistical Abstract of the United States* and Dunham. Demand and supply elasticities were obtained from Huang and from Ball, respectively.

The equilibrium percentage change in the expenditures on each of the three goods by recipients and non-recipients was calculated by substituting the equilibrium prices vector (A.4) into the appropriate expenditure system.

The effect of 1986 TEFAP cheese donations on prices and expenditures was calculated using the fact that the average TEFAP donation was 1.93 times the prior consumption of the typical recipient. A pound of TEFAP cheese was estimated to be worth $1.06, on average, compared to a market price of $2.60/lb.